Emergency Contraception: From Clinical Practice to Public Policy

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What if ?

A condom broke or slipped off, you had sex when you didn't expect to, you didn't use any birth control that weekend, you missed several pills, your diaphragm or cap slipped out of place, you were forced to have sex . . .

Emergency Contraception: Overview

- "Last chance" to prevent unintended pregnancy
  - 55%: Failure to use contraception
  - 35%: Contraceptive failure
  - 10%: Forced intercourse, missed OC, etc
- Could prevent 2.3 million untended pregs
- Highly cost effective: saves $54-124 per use
- YET:
  - 11% US women have basic facts
  - 1% US women have ever used EC

Emergency Contraceptives

- Regular contraceptives used in a different way
- Prevent pregnancy after intercourse
- Inhibit ovulation, fertilization, or implantation
  - Do not cause abortion
  - Will not interrupt or harm an established pregnancy
- Do not protect against sexually transmitted infections (STIs)

Emergency Contraception: History

- Mid-1960s: high dose estrogens
- Early 1970s: combined OCs (Yuzpe regimen)
- Late 1970s: copper IUD
- Mid-1990s: levonorgestrel-only pills
- Mid-1990s: antiprogestins

Ellertson. *Fam Plann Perspect* 1996;28:44

Emergency Options in the US

- Oral contraceptive pills containing estrogen and progestin (Yuzpe)
- Oral contraceptive pills containing only progestin
- Emergency Copper-T IUD insertion

Definition of Pregnancy

- **NIH/FDA**
  - "Pregnancy encompasses the period of time from confirmation of implantation until expulsion or extraction of the fetus"
- **ACOG**
  - "Conception is the implantation of the blastocyst. It is not synonymous with fertilization; synonym: implantation."

How MIGHT ECPs Work?

- Inhibit ovulation
- Trap sperm in thickened cervical mucus
- Inhibit tubal transport of egg or sperm
- Interfere with fertilization, early cell division, or transport of embryo
- Prevent implantation by disrupting the uterine lining

Trussell and Raymond. *Obstet Gynecol* 1999;93:872

Clinical Evidence: Combined ECPs

- Combined ECPs can inhibit ovulation, but do not always do so; primary mechanism of action
- Combined ECPs alter uterine lining in some cases
  - Whether this is sufficient to prevent implantation is not known
- The combined ECP regimen could not be as effective as it has proven to be if it worked only when taken before ovulation

Trussell and Raymond. *Obstet Gynecol* 1999;93:872

Clinical Evidence: Progestin ECPs

- Progestin-only ECPs **can inhibit ovulation** but do **not always** do so
  - Inhibiting ovulation may be the primary mechanism of action.
- Progestin-only ECPs **may immobilize sperm** by altering uterine pH.
- Progestin-only ECPs do not appear to alter uterine lining but can shorten the luteal phase

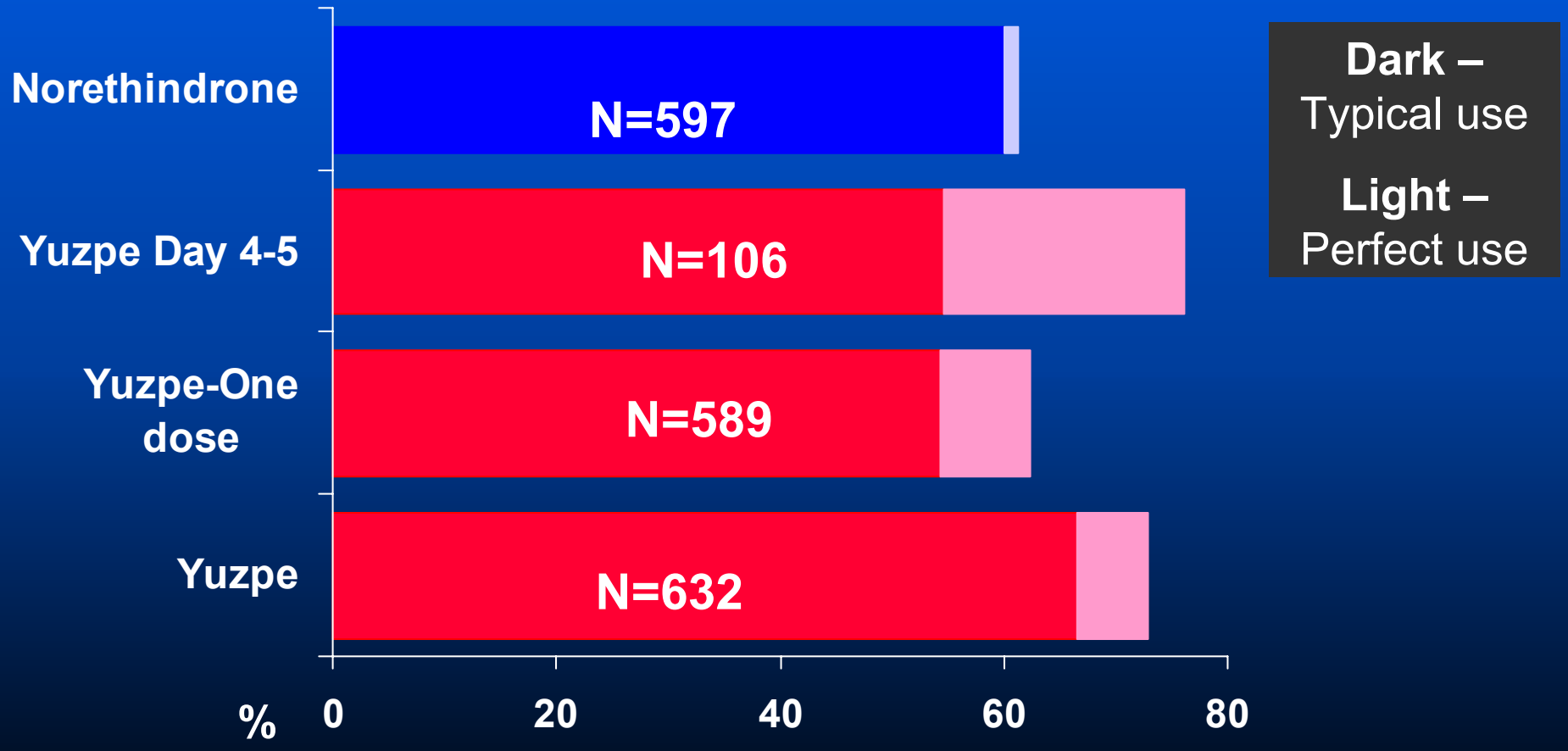
Hapangama et al. *Contraception* 2001;63:123
Croxatto et al. *Contraception* 2001;63:111
Kesseru E et al. *Contraception* 1974;10:411

EC Effectiveness

If 1000 women have unprotected sex once in the second or third week of their cycle

	# of Pregnancies	% Reduction
No treatment	80	
Combined ECPs	20	75%
Progestin Only ECPs	10	88%
IUD Insertion	1	99%

Effectiveness of ECP Regimens



Ellertson et al. *Obstet Gynecol* 2003, in press

ECPs: Combined E + P

- Ordinary birth control pills
- Contain estrogen and progestin
- 2 doses of 2 Preven tablets, or 2, 4, or 5 pills, depending on other brand
- First dose within 72 hours after intercourse
- Second dose 12 hours later
- Side effects: nausea (50%) and vomiting (20%)

Trussell et al. *Women's Health Prim Care* 1998;1:55

ECPs: Medication Regimens

- EE + LN: first dose, repeat in 12 hours
  - 2 tabs: Ovral
  - 4 tabs: Nordette, LoOvral, Levlen, Levora
  - 4 tabs: 3rd phase Tri-Phasil, Tri-Levlen
  - 5 tabs: Alesse
- Don’t substitute other OC's, since not tested

ECPs: Progestin-only

- Birth control pills containing only progestin
- 2 doses of 1 Plan B tablet or 20 Ovrette tablets
- First dose within 72 hours after intercourse
- Second dose 12 hours later
- More effective than combined ECPs
- Less nausea/vomiting than combined ECPs

Task Force. *Lancet* 1998;352:428

ECPs: Clinical Guidelines

- Works best if started ≤ 72 hours of *first* exposure
  - Reduced efficacy with later start
- Number of episodes of intercourse not relevant
- Should not be limited to mid-cycle exposure
- Contraindication to all EC regimens:
  - Known (or suspected) IUP
- Contraindications to EE +LN, not LN alone
  - Recent or current thrombotic disorder
  - Acute classic migraine headache

ECPs: Clinical Guidelines

- Use as "teachable moment"; initiate birth control
- Prevent pregnancy from post-ECP ovulation
  - Take 1 OC each day for 13 days, with barrier back-up first 7 days (OR)
  - Use barrier only until next menses (OR)
  - Avoid intercourse until next menses
- Follow-up regimens:
  - Routine visit in 3 weeks for pregnancy test (OR)
  - "As needed" visit if abnormal or no menses, pregnancy symptoms

Beginning Contraception After EC

Oral contraceptives, patches, and vaginal rings

- **Regular start**: use backup until next period, then begin pills or patches or rings according to regular patient instructions
- **Jump start**:
  - »Take 2 ECP doses
  - »Start a new pack of OCs or use a patch or ring the next day (use backup for 7 days)

Beginning Contraception After EC

Lunelle® or Depo-Provera®

- **Regular start**: use backup until next period, then start Lunelle or Depo-Provera
- **Jump start**:
  - Take 2 ECP doses; start DP the next day
  - Use backup for first seven days
- **Modified jump start**:
  - Take 2 ECP doses, start OCs the next day (use backup for first seven days)
  - Start DP after next period

Beginning Contraception After EC: Other Methods

- Condoms — immediately
- Spermicides — immediately
- Diaphragm — immediately
- IUD — after next menses *

* backup until menses

Side Effects: ECPs

	Nausea	Vomiting
Progestin Only	23%	6%
Combination (Yuzpe)	50%	19%
RR	.46	.28

WHO Task Force. *Lancet* 1998;352:428

Reducing the Risk of Nausea

- Taking combined ECPs with food?
  - Common clinical recommendation based on anecdote and analogy with starting OC use
  - Evidence from two studies suggests this strategy is not effective
- Taking anti-nausea medication?
  - Anti-nausea meds labeled for motion sickness
  - FHI randomized clinical trial

Raymond et al. *Obstet Gynecol* 2000;95:271
Ellertson et al. *Obstet Gynecol* 2003, in press

Results: Relative Risk of Nausea (N), Vomiting (V), or Drowsiness (D)

	#	N	V	D
Yuzpe alone	109	1.00	1.00	1.00
Yuzpe + placebo	107	1.00	1.39	.84
Yuzpe + meclizine	108	.74	.36	1.96

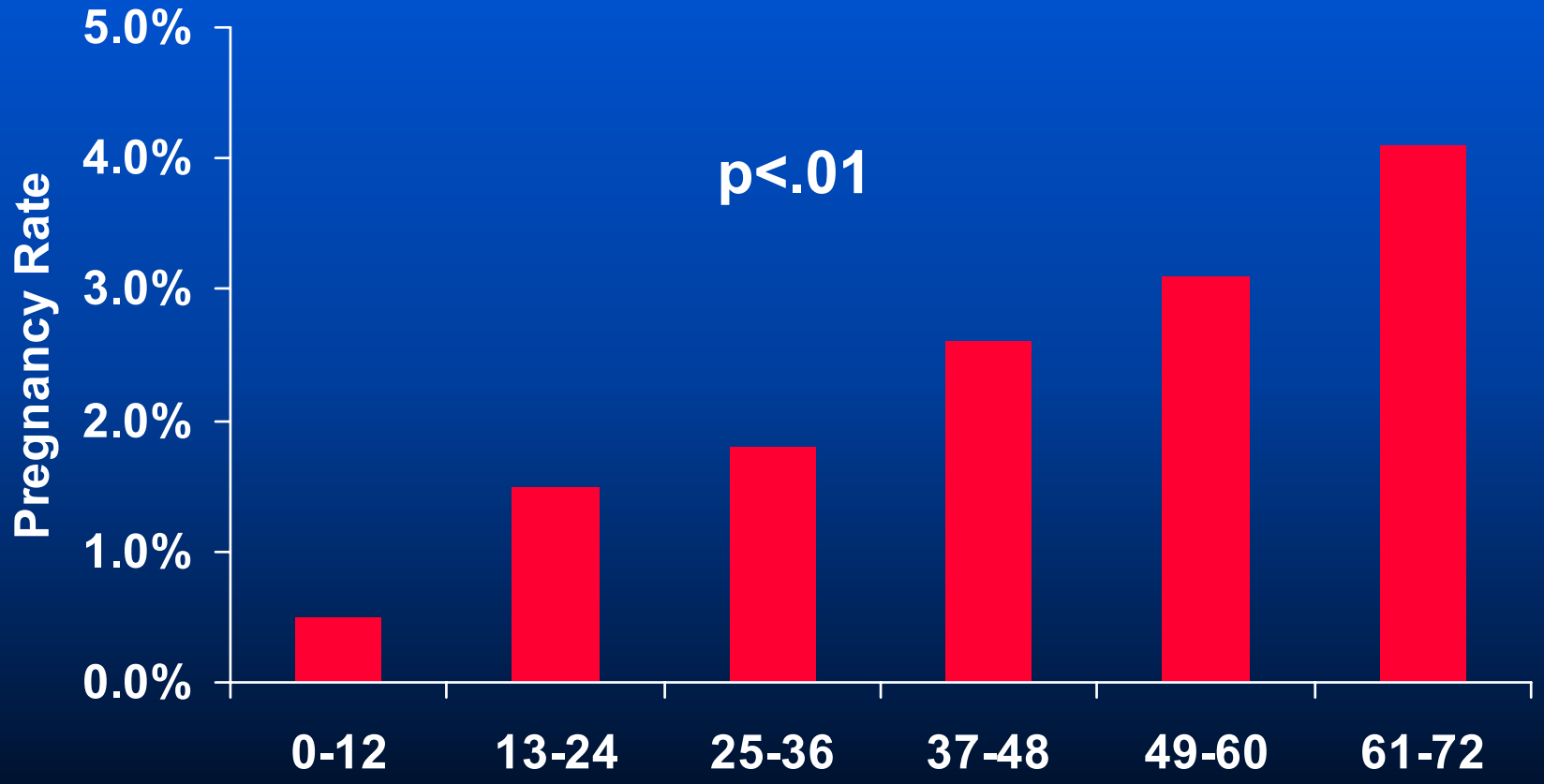
Raymond et al. *Obstet Gynecol* 2000;95:271

Reducing the Risk of Nausea

- Meclizine significantly reduces the risk of nausea and vomiting associated with the Yuzpe regimen of emergency contraception
- Meclizine significantly increases the risk of drowsiness
- There is no placebo effect

Raymond et al. *Obstet Gynecol* 2000;95:271

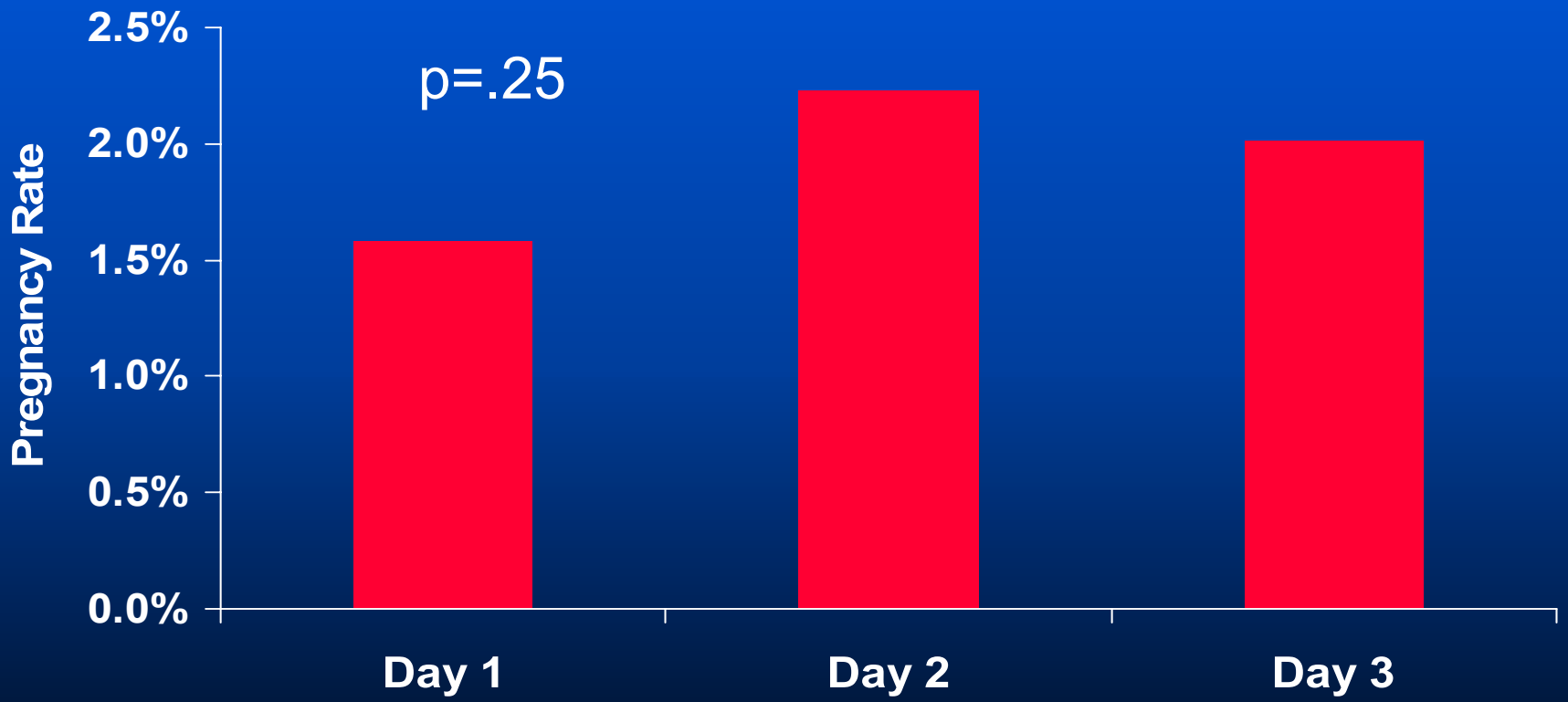
How Long After the Morning After?
WHO Pooled Data (Yuzpe and LNg)



Piaggio et al. *Lancet* 1999;353:721

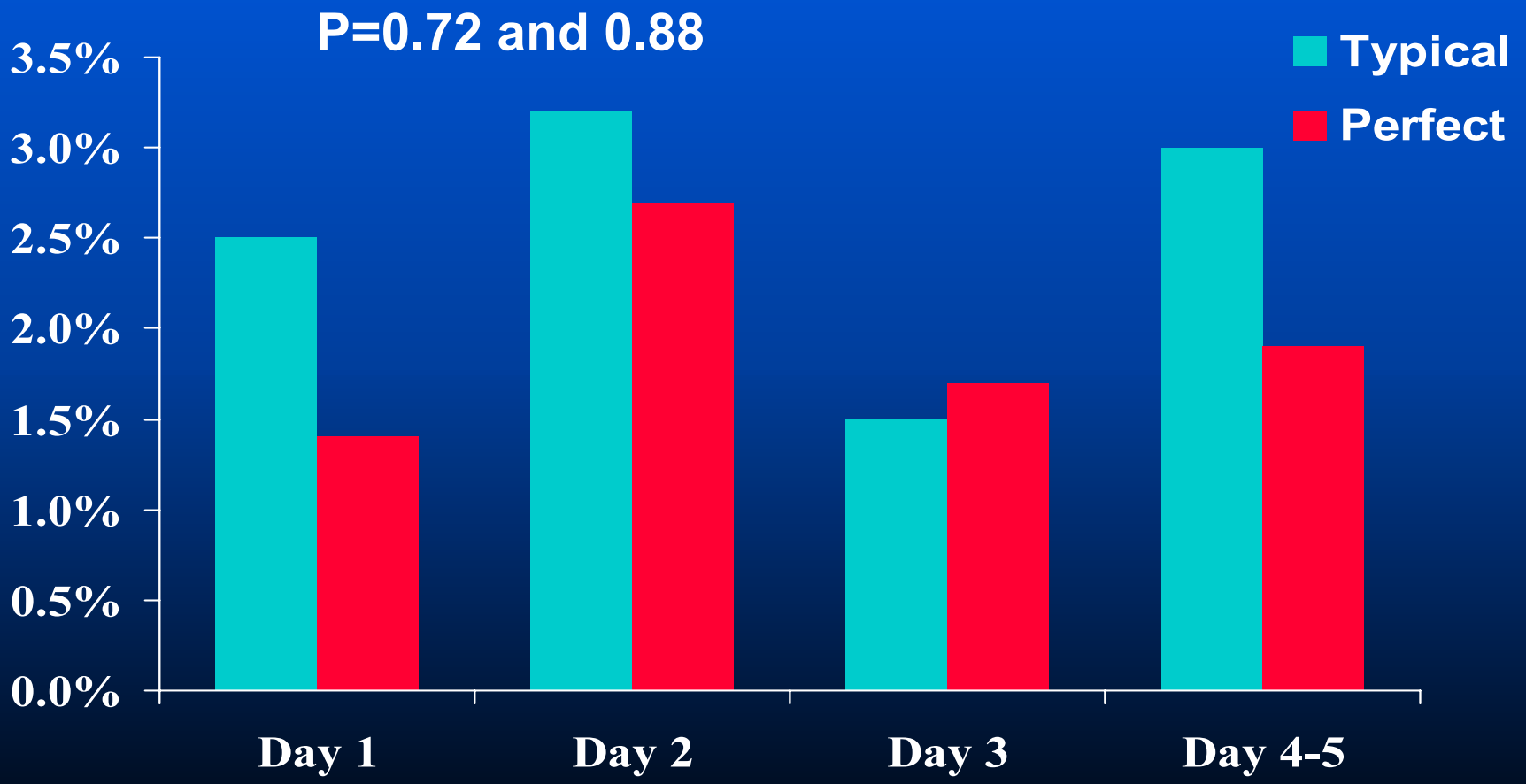
How Long After the Morning After?

Meta-Analysis of 9 Yuzpe Trials



Trussell et al. *Obstet Gynecol* 1996;88:150

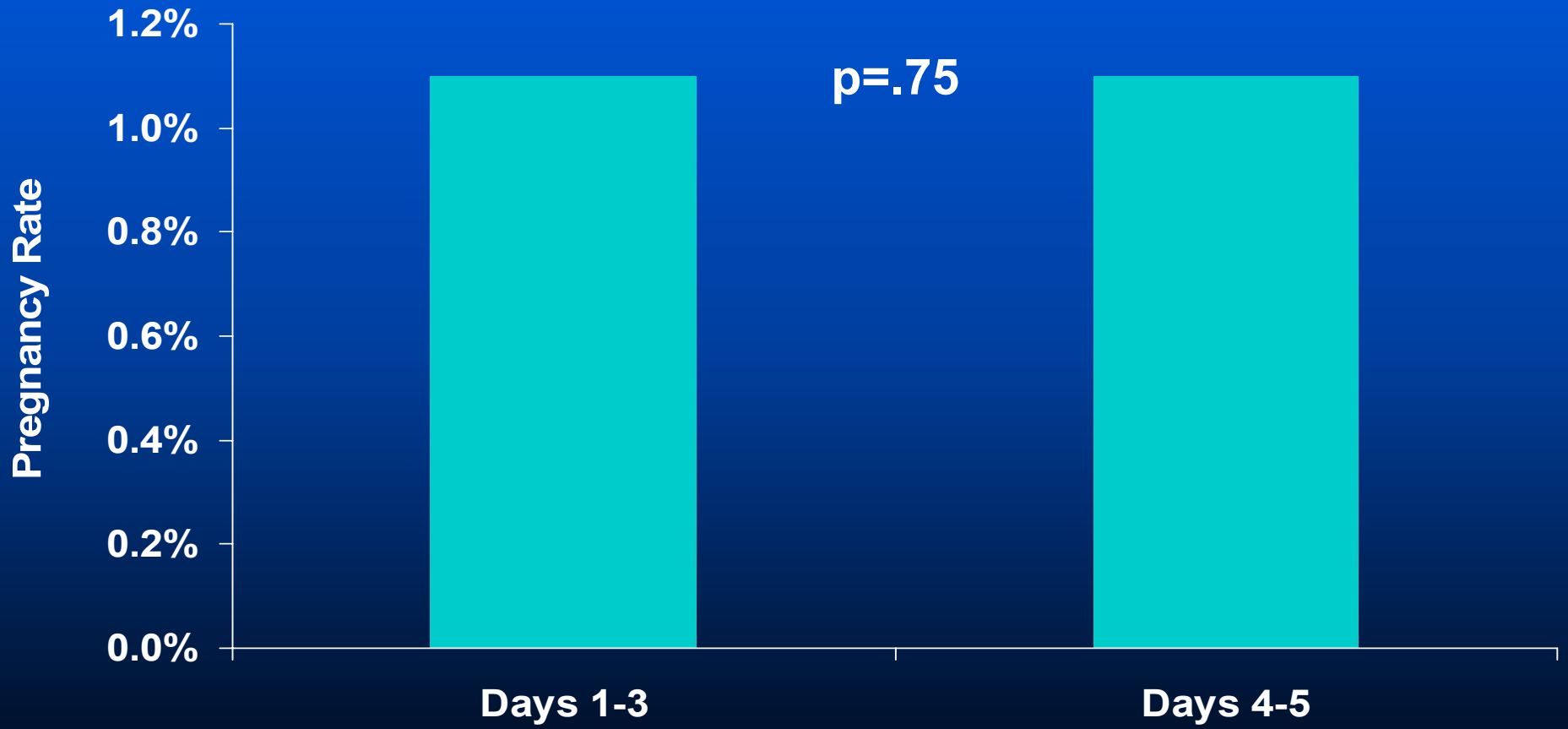
How Long After the Morning After?
Population Council (Yuzpe)



Ellertson et al. *Obstet Gynecol* 2003, in press

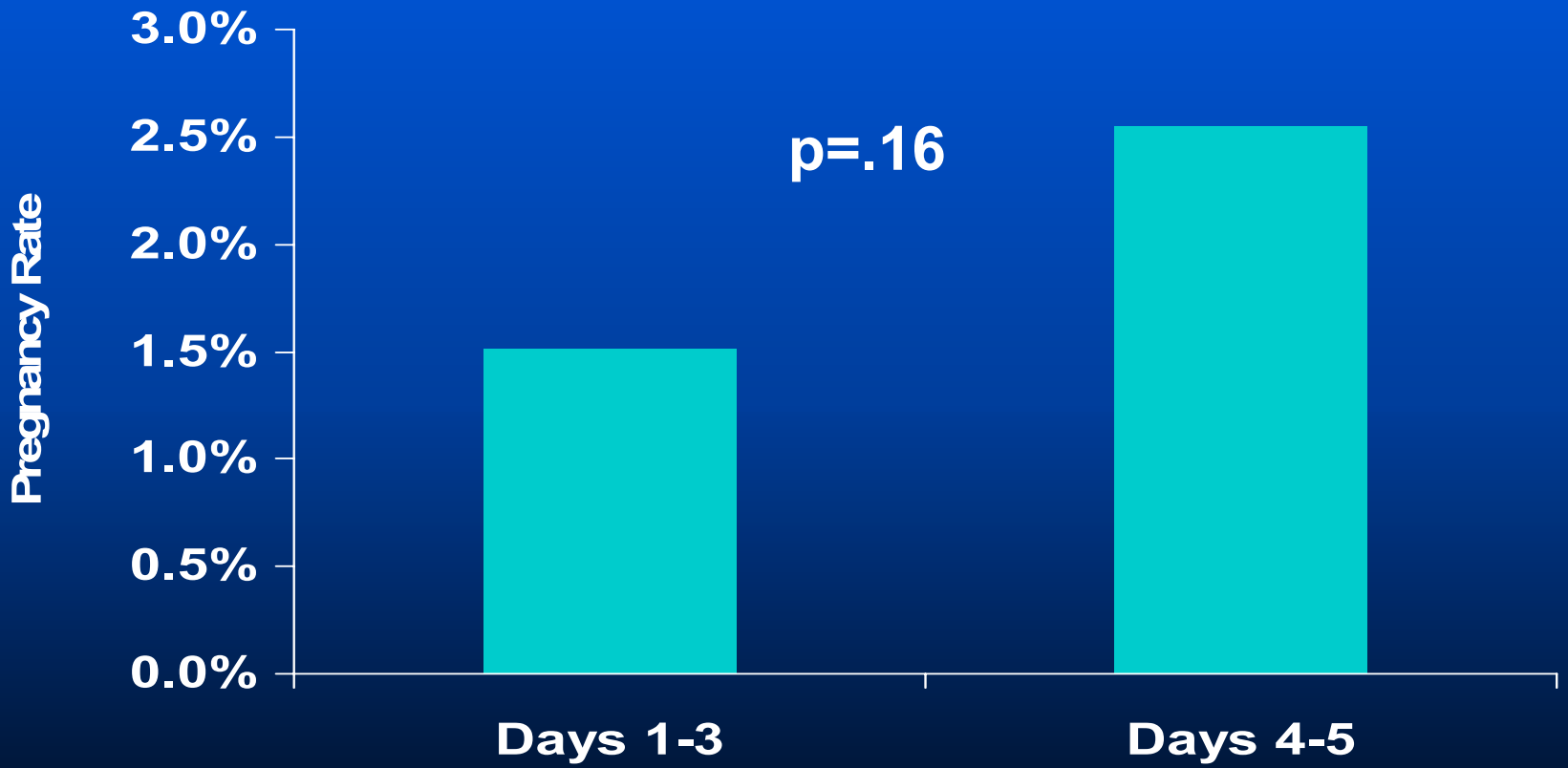
How Long After the Morning After?

Quebec (Yuzpe)



Rodrigues et al. *Am J Obstet Gynecol* 2001;184:531

How Long After the Morning After?
Latest WHO Trial (LNg)



von Hertzen et al. *Lancet* 2002;360:1803

Emergency Contraception: Safety

- No evidence-based contraindications for either combined or progestin-only ECPs
- Acute classical migraine (combined ECPs)?
- History thrombotic disease (comb ECPs)?
  - One small study showed no effect of combined ECPs on clotting factors

Conflicting Contraindications: Combined ECPs

- Preven®
  - Known or suspected pregnancy
  - Pulmonary embolism (current or history)
  - Ischemic heart disease (current or history)
  - History of cerebrovascular accidents
  - Valvular heart disease with complications
  - Severe hypertension
  - Diabetes with vascular involvement
  - Headaches with focal neurological symptoms

Conflicting Contraindications: Combined ECPs

- Preven (continued)
  - Major surgery with prolonged immobilization
  - Known or suspected carcinoma of the breast or personal history of breast cancer
  - Liver tumors (benign and malignant)
  - Active liver disease
  - Heavy smoking (>15 cig/day) and over the age of 35
  - Known hypersensitivity to any component of this product

Conflicting Recommendations: Combined ECPs

- World Health Organization
  - Confirmed pregnancy
- Faculty of FP and RH Care (United Kingdom)
  - Confirmed pregnancy
  - Migraine (if Hx of focal migraine)
  - History of thromboembolism (relative CI)
- Planned Parenthood Federation of America
  - Suspicion or evidence of established pregnancy

Contraindications: Progestin-only ECPs

- Plan B®
  - Known or suspected pregnancy
  - Hypersensitivity to any component of the product
  - Undiagnosed abnormal genital bleeding

ECPs: Legal Concerns

- FDA Federal Register notice 2/97
  - "OCs with EE + LN are safe and effective for use as emergency contraceptive"
- Legal to prescribe a drug for "off-label" indications as long as "individual clinician-patient decision"
- It is a violation of FDA regulations to ***advertise*** a specific drug for off-label uses
  - Use "EC" rather than "the morning-after Pill" or "emergency contraceptive Pills"

Providing EC is Now the Medico-Legal Standard of Care

- ACOG Practice Pattern on ECPs (12/96) established the professional standard of care
- FDA notice in Federal Register on ECPs (2/97) declared 6 (now 13) brands of regular OCs to be safe and effective for use for emergency contraception
- FDA explicitly approved Preven and Plan B as dedicated products, but FDA still recognizes 13 brands of regular combined OCs to be safe and effective for use for emergency contraception

Emergency Copper IUD Insertion

- Copper-T IUD (ParaGard)
- Insertion within 5 days after unprotected intercourse
- 10 more years of highly effective contraception
- Much more effective than ECPs
- Not recommended for women at risk of sexually transmitted infections (STIs)

EC: Public Health Implications

- 3.0 million unintended pregnancies each year in the United States: half (48%) of all pregnancies
- Half (48%) of women aged 15-44 have had an unintended pregnancy
- Emergency contraception has the potential to reduce unintended pregnancy significantly
- Emergency contraception is highly cost-effective

Henshaw. *Fam Plann Perspect* 1998;30:24
Trussell et al. *Am J Public Health* 1997;87:932

EC: Potential Population Impact

Reduce unintended pregnancies by half

1.5 million fewer

Reduce abortions needed by half

0.7 million fewer

Trussell et al. *Fam Plann Perspect* 1992;24:269
Henshaw. *Fam Plann Perspect* 1998;30:24

The Solution

- Change provider practices
  - Counsel women and men in advance
  - Provide ECPs in advance
- Market EC
  - Marketing promotes awareness
  - Specifically packaged products are less confusing for users and providers
- Educate women and men
- Change from Rx to over/behind the counter

Does Providing ECPs Increase Risk-Taking?

- Empirical evidence from studies in Scotland and San Francisco where women were randomized to receive counseling and ECPs on demand or to receive ECPs in advance for later use should the need arise.

Glasier and Baird. *N Engl J Med* 1998;339:1
Raine et al. *Obstet Gynecol* 2000;96:1

Advance Provision of ECPs

- 549 women given ECPs in advance; 522 counseling
- Advance group were more likely to use ECP
  - 47% vs. 27% women who were counseled only
  - Were not more likely to use ECPs repeatedly
  - Used other methods equally well
- Advance group had fewer unintended pregnancies
  - 3.3% vs 4.8% in women who received only counseling

Glasier, Baird NEJM 1998;339:1

Advance Provision of EC

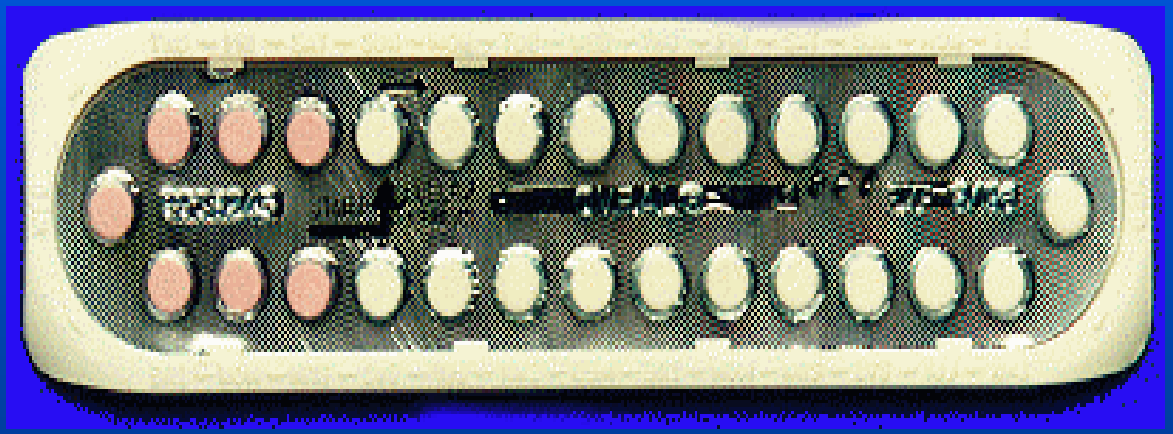
- Were more likely to use ECPs: 22% *vs* 7% of women who received only counseling (p=.006)
- Were not more likely to have unprotected sex
- Were not less likely to use condoms consistently
- Were less likely to use oral contraceptives consistently: 32% *vs* 58% of women who received only counseling (p=.03)

Raine et al. *Obstet* Gynecol 2000;96:1

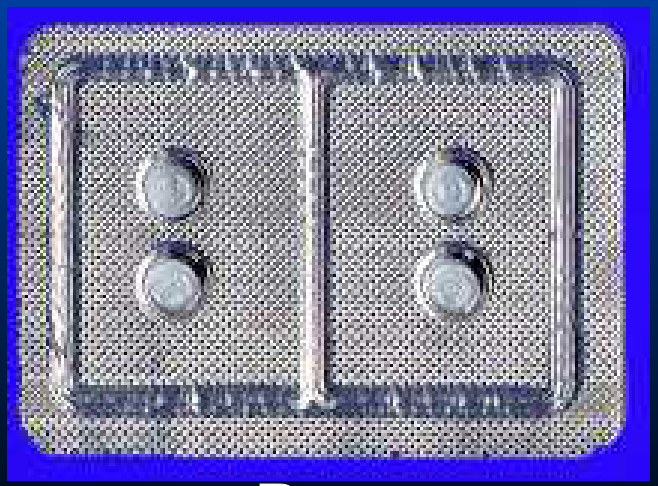
The Problem: Why a 25-Year Delay?

- Companies did not market pills or IUDs for emergency contraception in the U.S.
- Clinicians do not routinely counsel women (or men) about emergency contraception
- Women (and men) do not know about emergency contraception

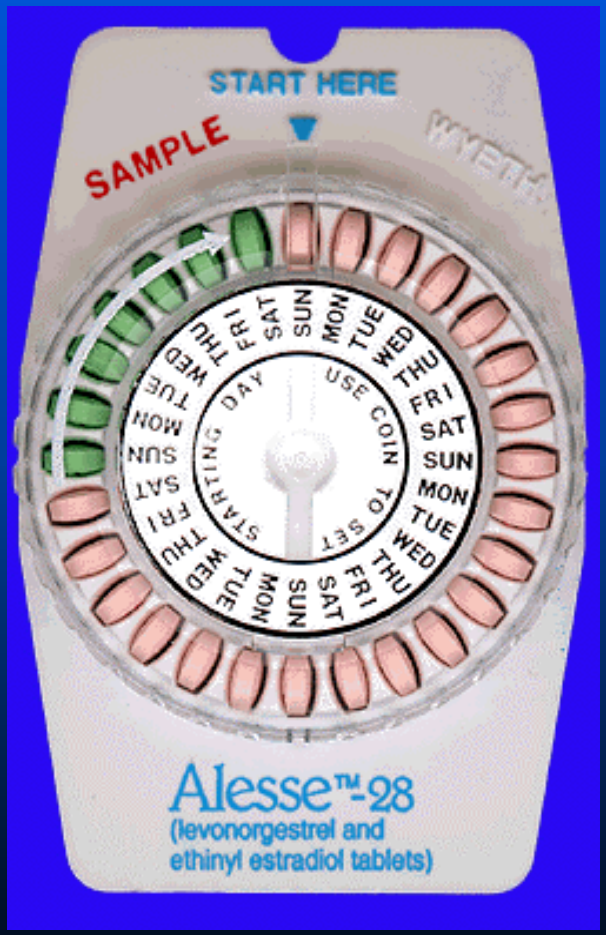
The Value of a Dedicated Product



Ovral



Preven



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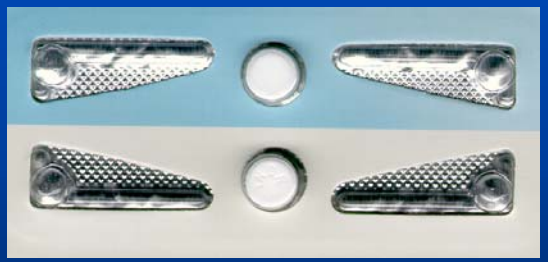
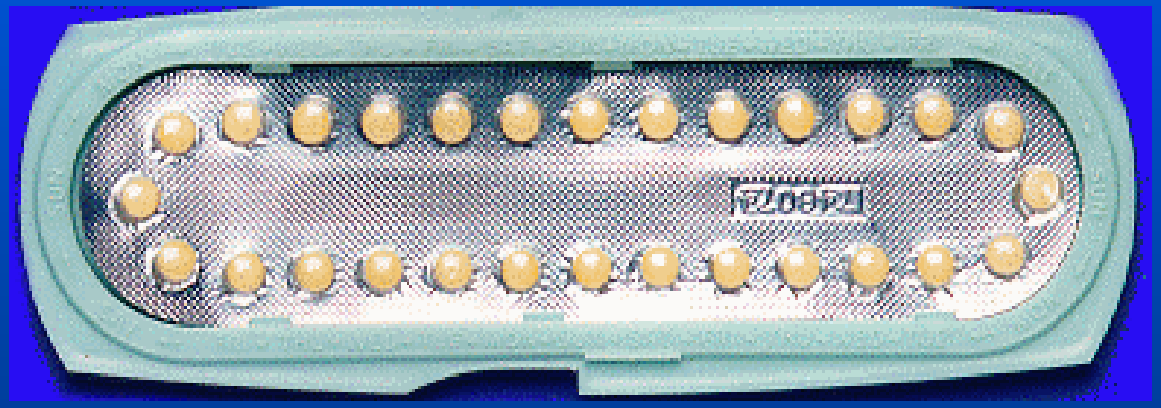
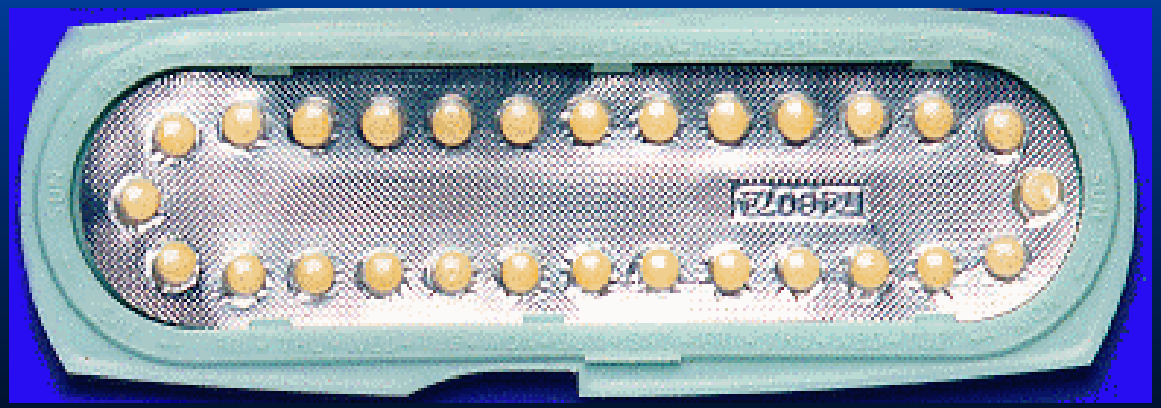
The Value of a Dedicated Product



Plan B





Ovrette

Emergency Contraception BTC

- ECPs are available directly from pharmacists without having first to get a prescription from a clinician in:
  - –Washington State
  - –British Columbia
  - –France
  - –United Kingdom
  - –South Africa
  - –Portugal
  - –Belgium
  - –Albania
  - –Denmark
  - –Sweden

Response to Pharmacy Availability: Washington State

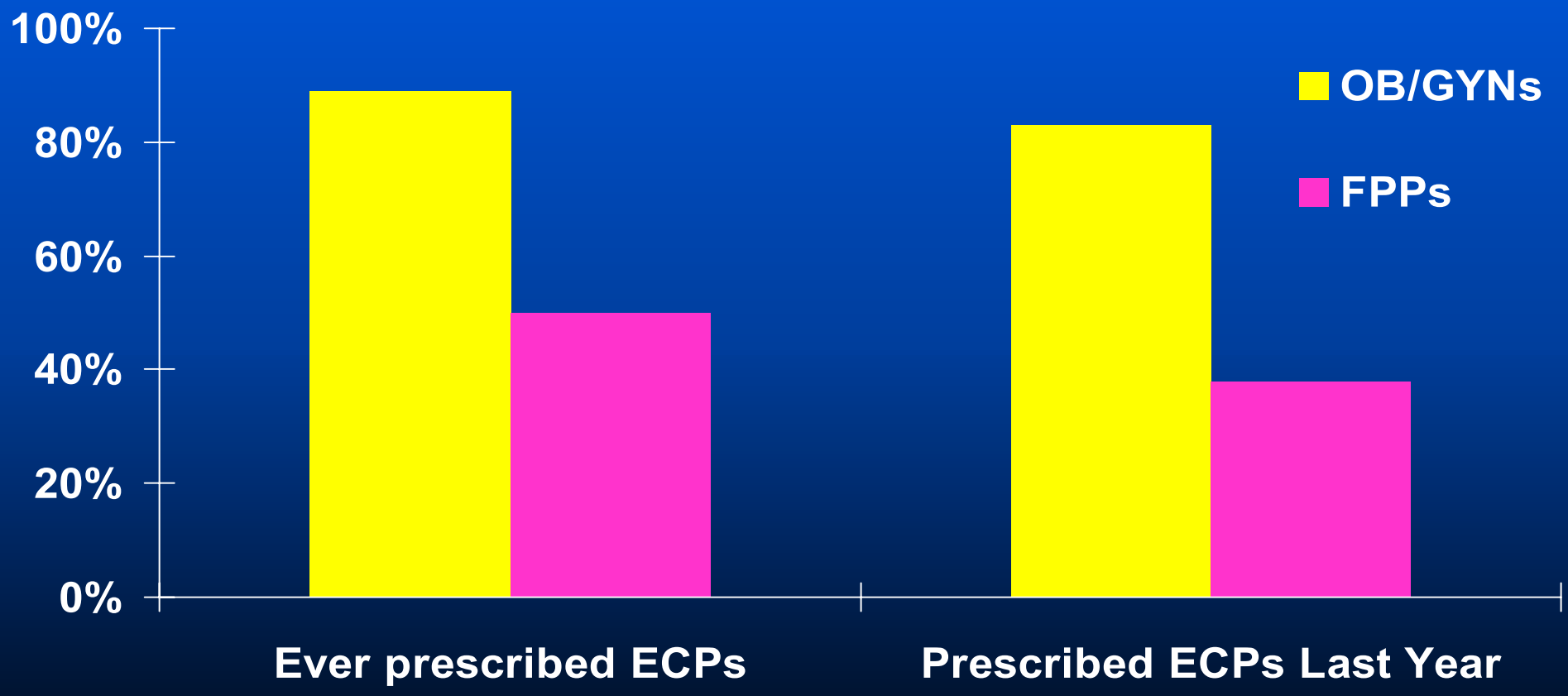
- 10,000 patient visits per year
- 42% of visits were during evenings, weekends, or holidays
- 95% of women had sufficient opportunity to ask questions
- 85% of women were satisfied with the on-going contraceptive counseling provided by pharmacists
- Medicaid projects annual savings of up to $10 million

Planned Parenthood State Hotlines

Prescriptions are called in to the client's pharmacy of choice

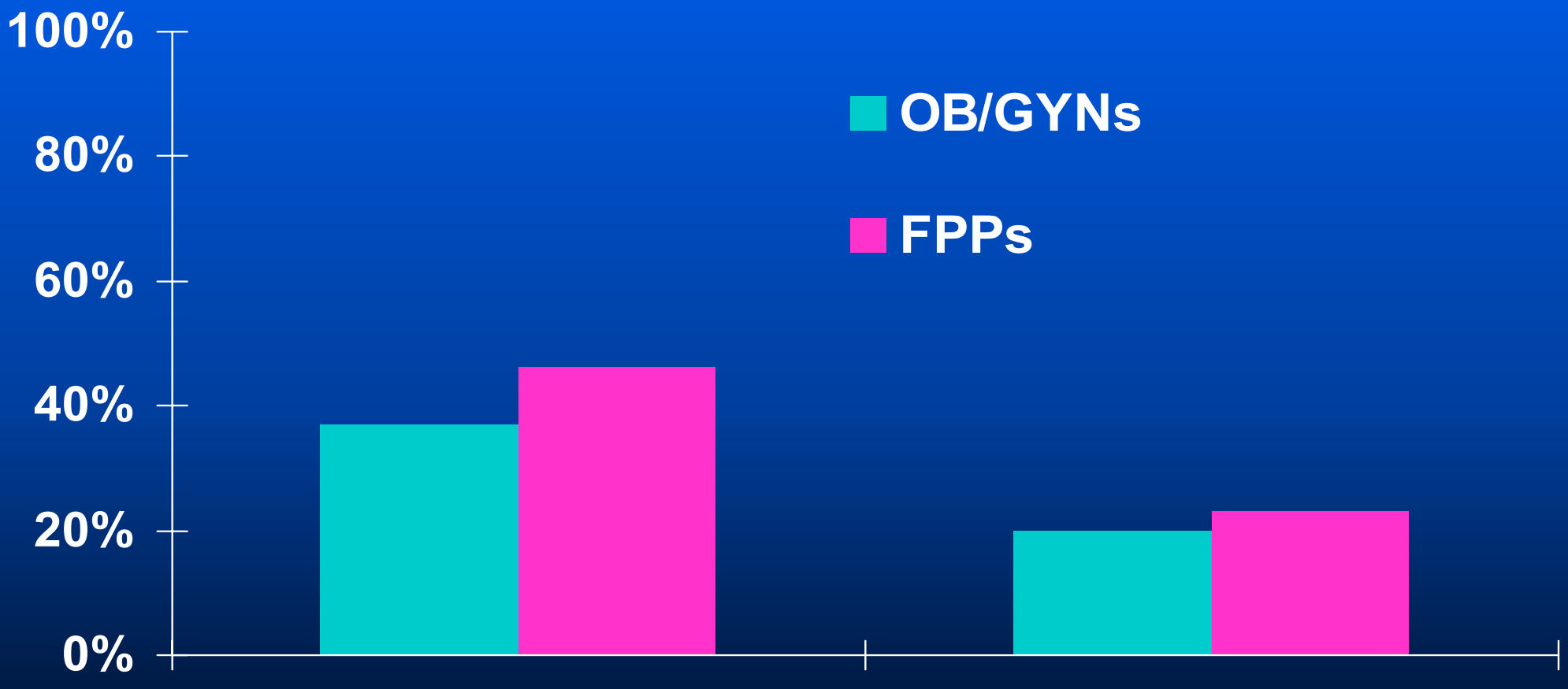
- **Georgia: 1-877-ECPills**
- **Maryland: 1-877-99-GO-4-EC**
- **Connecticut: 1-800-230-PLAN**
- **North Carolina: 1-866-942-7762**
- **Illinois: 1-866-222-EC4U**

Provider Practice: Good News



The Henry J. Kaiser Foundation 2001

Provider Practice: Bad News



The Henry J. Kaiser Foundation 2001

The Clinical Bottleneck

- Clinicians overwhelmingly think ECPs are safe and effective, and the majority have prescribed in the last year
- Clinicians are waiting for women to ask for EC

The Clinical Bottleneck

- But women do not know to ask
  - While 76% of women have heard of ECPs/morning-after pills
  - Only 16% of women know 72-hour time frame
  - Only 2% of women have ever used ECPs

Educate Women

- Emergency Contraception Hotline
  - 1-888-NOT-2-LATE
- Emergency Contraception Website
  - http://not-2-late.com
- Public education media campaigns
- Family PACT standard